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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/458,768	12/10/1999	CHARLES C. BYERS	BYERS-31-1-1	9256

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EXAMINER	
CHO, HONG SOL	
ART UNIT	**PAPER NUMBER**
2662	

DATE MAILED: 02/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/458,768	BYERS ET AL.	
	Examiner	Art Unit	
	Hong Cho	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11-22-2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5,7-15 and 17-44* is/are rejected.

7)☒ Claim(s) *6 and 16* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 December 1999* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The following is a response to the amendments filed on 11/22/2004.

Drawings

2. New corrected drawing is required in this application because label 106 is used to reference two different elements: "transmission line" in figure 1 and "ATM cell" in figure 6. Note that the specification also includes this deficiency and should also be corrected.

Specification

3. The disclosure is objected to because of the following informalities:

On page 26, lines 17-18, it is not clear what is meant by "using signaling cells 152 (e.g., AAL-0 cells) of the same form as the PCM cells 150", it appears that octets are referred to ambiguously as cells. The same remark applies to "The payload of the signaling cells 152 ...", on page 26, line 20.

Claim Objections

4. Claims 1 and 11 are objected to because of the following informalities:

Re claims 1 and 11, for the purpose of the clarity, usage of a consistent terminology is suggested for "transmission link" and "transmission line" wherever appropriate.

Claim Rejections - 35 USC § 112, first paragraph

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 2-5, 8, 9, 12-15, 18, 19, 22-26, 32, 33, 35-37, 43 and 44 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

6. These claims are not supported by the specification because they are directed to multiple mutually exclusive embodiments, for example, claim 2 is directed to two embodiments, first embodiment discloses separating data and signaling portions of narrowband transmissions into separate byte positions in each of composite ATM cells and a second embodiment discloses composite ATM cells comprising a first composite cell of the pair which includes data for a plurality of channels and a second composite of the pair which includes signaling information associated with each of the plurality of channels. The specification describes these two embodiments as being separate and therefore claims providing simultaneous coverage of multiple embodiments are not supported by the specification.

Claims 3-5, 13-15, 23-26, 36 and 37 are rejected because they depend on claims 2, 12, 22, and 35, respectively.

For the purpose of examination, "separating data and signaling portions of said narrowband transmissions into separate byte positions in each of the composite ATM cells" is understood to mean composite ATM cells comprising a first composite cell which includes data and a second composite cell which includes signaling information in support of dependent claims.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102(e) that form the basis for the rejections under this section made in this Office action:

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1-5, 7, 11-15, 17, 20-26, and 28-31 are rejected under 35 U.S.C. 102(e) as being unpatentable over Song (U.S 6289018).

Re claims 1, 2, 4, 5, 7, 11, 12, 14, 15, 17, and 20, Song discloses transmitting data and signaling information over an ATM system (*asynchronously transporting narrowband*

and broadband transmissions over a link, abstract). Song discloses an ATM switching system comprising a subscriber input/output module, an ATM switch and a trunk input/output module (*providing at least one host terminal/network unit for receiving and transmitting communications over a transmission line,* abstract). Song discloses splitting 2B+D channel data into B-channel data and D-channel data (*converting narrowband transmissions to and from composite ATM cells by separating data and signaling portions of said narrowband transmissions into separate byte positions in each of the composite ATM cells*, figures 5-7; column 2, lines 49-52) and multiplexing the split B and D-channel data to corresponding highways to assemble ATM cells (*the composite ATM cells include pairs of ATM cells and further comprising the step of constructing a first composite cell of the pair which includes data for a plurality of channels and a second composite of the pair which includes signaling information associated with each of the plurality of channels*, figures 5-7; column 2, lines 49-52). Song discloses the CLAD assembling B-channel and D-channel stream data into ATM cells and transferring them to the CLADs at the destination or to the ATM interfaces (*transferring the composite ATM cells over the transmission link, the composite ATM cells including both narrowband and broadband composite cells*, figures 5-7; column 7, line 54 to column 8, line 21).

Re claims 3, 13, and 23, it is inherent that ATM cells assembled from B and D-channel stream data are logically linked.

Re claims 21, 22, 24, 25, and 26, Song discloses an ATM switching system comprising a subscriber input/output module, an ATM switch and a trunk input/output module

(*providing at least one host terminal/network unit for receiving and transmitting communications over a transmission line,* abstract). Song discloses splitting 2B+D channel data into B-channel data (voice and data information is transferred) and D-channel data (signaling and control information is transferred) (*converting narrowband transmissions to and from composite ATM cells by separating data and signaling portions of said narrowband transmissions into separate byte positions in each of the composite ATM cells*, figures 5-7; column 2, lines 49-52)

and multiplexing the split B and D-channel data to corresponding highways to assemble ATM cells (*the composite ATM cells include pairs of ATM cells and further comprising the step of constructing a first composite cell of the pair which includes data for a plurality of channels and a second composite of the pair which includes signaling information associated with each of the plurality of channels*, figures 5-7; column 2, lines 49-52).

Re claim 28, Song discloses a frame handler for handling a trunk interface (*converting broadband signals to and from the composite ATM cells*, column 6, lines 44-49)

Re claim 29, Song discloses a multiplexer for addressing information between a narrowband and a broadband interface (column 7, line 66 to column 8, line 1).

Re claim 30, Song discloses that the network unit is co-located with a service subscriber (abstract).

Re claim 31, it is inherent that the composite ATM cells include header information for directing the cells to a destination.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10. Claims 8, 9, 18, 19, 32 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Song in view of Hiller et al (U.S 5327421), hereinafter referred to as Hiller.

Re claims 8, 9, 18, 19, 32 and 33, Song fails to disclose the composite ATM cell for messaging information associated with each of the plurality of channels. However, Hiller discloses a system where a plurality of narrowband telephony channels and their associated messages are converted into ATM cells (abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the Song system communicate a plurality of channels and their associated messages in the ATM cells, as taught in Hiller because doing so would allow more subscribers to be serviced, thus increasing the system capacity and versatility.

Claims 10, 27, 34-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Song in view of Stevenson et al (U.S 5889773), hereinafter referred to as Stevenson.

Re claim 10, Song does not disclose connecting the host terminal to an optical network unit. However, Stevenson discloses connecting the host terminal to an optical network unit. It would have been obvious to one having ordinary skill in the art at the time the invention was made to connect the host terminal of Song to an optical unit of Stevenson to improve network transmission speed.

Re claim 27, Song does not disclose the circuit pack including a narrowband interface for converting PCM signals to and from the composite ATM cells. However, Stevenson discloses host digital terminal converting PCM signals to and from ATM cells. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Song to include the function of Stevenson in converting PCM signals to and from ATM cells.

Re claim 34, Song discloses transmitting data and signaling information over an ATM system (*asynchronously transporting narrowband and broadband transmissions over a link*, abstract). Song discloses an ATM switching system comprising a subscriber input/output module, an ATM switch and a trunk input/output module (*providing at least one host terminal/network unit for receiving and transmitting communications over a transmission line, abstract*). Song discloses a frame handler for handling a subscriber interface or a trunk interface (*the back plane providing both narrowband and broadband communications from a network*, column 6, lines 44-49).

Song discloses splitting 2B+D channel data into B-channel data (voice and data information is transferred) and D-channel data (signaling and control information is transferred) (*converting narrowband transmissions to and from composite ATM cells by separating data and signaling portions of said narrowband transmissions into separate byte positions in each of the composite ATM cells*, figures 5-7; column 2, lines 49-52). Song does not disclose an optical network unit connected to the host terminal by an optical line. However, Stevenson discloses connecting the host terminal to an optical network unit by an optical line. It would have been obvious to one having ordinary skill in the art at the time the invention was made to connect the host terminal of Song to an optical unit of Stevenson to improve network transmission speed.

Re claims 35-37, Song discloses splitting 2B+D channel data into B-channel data (voice and data information is transferred) and D-channel data (signaling and control information is transferred) (*converting narrowband transmissions to and from composite ATM cells by separating data and signaling portions of said narrowband transmissions into separate byte positions in each of the composite ATM cells*, figures 5-7; column 2, lines 49-52) and multiplexing the split B and D-channel data to corresponding highways to assemble ATM cells (*the composite ATM cells include pairs of ATM cells and further comprising the step of constructing a first composite cell of the pair which includes data for a plurality of channels and a second composite of the pair which includes signaling information associated with each of the plurality of channels*, figures 5-7; column 2, lines 49-52).

Re claim 38, Song does not disclose the circuit pack including a narrowband interface for converting PCM signals to and from the composite ATM cells. However, Stevenson discloses host digital terminal converting PCM signals to and from ATM cells. It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Song to include the function of Stevenson in converting PCM signals to and from ATM cells.

Re claim 39, Song discloses a frame handler for handling a trunk interface (*converting broadband signals to and from the composite ATM cells*, column 6, lines 44-49)

Re claim 40, Song discloses a multiplexer for selectively transporting information between the narrowband and the broadband interfaces (column 7, line 66 to column 8, line 1).

Re claim 41, Song discloses that the network unit is co-located with a service subscriber (abstract).

Re claim 42, Song discloses transferring the composite ATM cells to the destination subscriber (*the composite ATM cells include header information for directing the cells to a destination,* abstract).

Claims 43 and 44, are rejected under 35 U.S.C. 103(a) as being unpatentable over Song in view of Stevenson and further in view of Hiller.

Re claims 43 and 44, neither Song nor Stevenson disclose the composite ATM cell for messaging information associated with each of the plurality of channels. However, Hiller

discloses a system where a plurality of narrowband telephony channels and their associated messages are converted into ATM cells (abstract). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the Song and Stevenson system communicate a plurality of channels and their associated messages in the ATM cells, as taught in Hiller because doing so would allow more subscribers to be serviced, thus increasing the system capacitance and versatility.

Allowable Subject Matter

11. Claims 6 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. Claims 6 and 16 are allowable over the prior art of record since the cited references taken individually or in combination fail to particularly teach or fairly suggest transferring composite ATM cells periodically by sending the first composite ATM cell of each pair every period and the second composite ATM of each pair every fourth period. It is noted that the closest prior art of record, Song shows transferring ATM cells. However, Song fails to suggest transferring the first composite ATM cell of each pair every period and the second composite ATM of each pair every fourth period as required by the claimed invention.

Response to Arguments

13. Applicant's arguments with respect to claims 1-44 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

14. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- US Patent (6807177) to Henrion discloses asynchronous switching of composite cells
- US Patent (6097699) to Chen et al. discloses monitoring broadband QoS
- US Patent (6119879) to Choi discloses telephone service system in a ATM network

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hong Cho whose telephone number is 571-272-3087. The examiner can normally be reached on Mon-Fri during 7 am to 4 pm.
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on 571-272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3088.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Hong Cho
Patent Examiner
01-27-2005

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